

# Taking a VOC (Volatile Organic Chemical) Sample Properly

Sometimes water samples show contaminants because of sampling error. To ensure that this does not happen, follow these steps when taking the VOC samples from your water system.

## Get a sample kit from your lab

One vial will be labeled "Trip Blank." You do not need to do anything to it, except send it back to the lab with your test kit water. If the system chlorinates, a brown bottle may also be in the kit.

### Step One



Contaminants can put air in the water that will regroup into bubbles during shipping, and make the sample unusable.

### Step Two



## Do Not Rinse Out The Vials

There is a small amount of acid in the other vials (and bottle). Do not rinse it out, it is meant to be there. The brown bottle is used to neutralize the chlorine before you fill the vials.

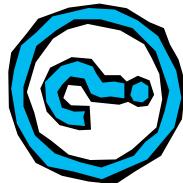
### Step Four



## Where Do You Take The Sample?

The sampling point should be a tap faucet, after the treatment system if one exists. Make sure you select an area free from gasoline or diesel fuel fumes.

### Step Three



**Make sure you keep all the vials together the whole time you are taking your samples. The samples must be sent to the lab immediately.**

## Do Not Touch The Inside Of The Vial Or Cap

Make sure you are wearing clean clothes free of grease, fuel or oil stains. Remember to wash your hands before and after you take the sample.

### Step Six



## Run The Water Slowly

Using the cold water, fill the vial until it is slightly over-filled. The water should end up in a mound shape above the rim of the vial. Screw the cap on tightly.

### Step Five



## Remove The Screen, Hoses, or aerators from the faucet.

These devices can put air in the water that will regroup into bubbles during shipping, and make the sample unusable.

### Step Eight



## Fill Out The Paperwork

and KEEP a copy for your files. Pack the samples in a Styrofoam container or bubble wrap so the vials do not break. Mail it in to the lab as soon as possible.

### Step Seven



## Turn The Vial Over and tap the cap on a hard surface. There should NOT be an air bubble in the sample.

If there is an air bubble, unscrew the cap and add more water.

**Keep the sample cool by placing samples in a cooler with an ice pack. Do not Freeze.**

## Volatile Organic Chemicals (VOCs)

**V**olatile Organic Chemicals (VOCs) refers to a group of organic compounds that are usually derived from fuel products or solvents. These compounds can sometimes enter drinking water sources from leaking fuel storage tanks, improper disposal of fuel, paint, solvents, and other VOC-containing products, or solid waste or hazardous waste disposal sites. Currently, there are 21-regulated VOCs for which Class A Public Water Systems (PWS) must monitor. The regulated VOCs include: benzene, toluene, xylene, carbon tetrachloride, and other compounds. VOCs may cause both short-and-long term health problems at levels above the health standards set by the US EPA. Many of these compounds are known or suspected carcinogens which may contribute to an increased risk of some types of cancer if a person is exposed to them over long periods of time.

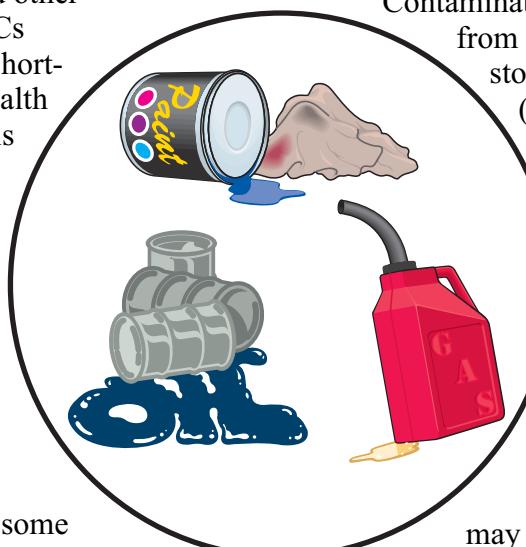
All Class A PWS's are required to monitor for VOC's (instructions on back). Systems that use surface water are required to monitor annually. Most systems that use groundwater are required to monitor every three years. If any of the regulated VOC levels is

higher than 0.5 ppb, the system begins quarterly monitoring to track levels, and movement of the compounds over time. If any regulated VOC exceeds the Maximum Contaminant Level (MCL), the system must treat the water to remove and reduce the contamination. Granular activated carbon (GAC) adsorption and aeration are the most commonly used treatment methods for removing VOCs from water.

It is very important for communities and water system owners to plan ahead and implement a program to protect their drinking water source from VOC contamination.

Contamination can come from leaking fuel storage tanks (above and below ground), and improper storage and disposal of solvents, paints and paint thinners. Aerosol containers

may also leak and contaminate a drinking water source. Proper containment and monitoring measures should be implemented for fuel storage areas and landfills. If a spill or leak does occur, it should be reported to DEC right away so that measures can be taken to protect the drinking water source.



Contact DEC Spill Prevention and Response staff in the event of a contaminant (fuel or solvent) spill. Anchorage: 269-3063; Juneau: 465-5340; Fairbanks: 451-2121 or if the spill occurs after business hours call 1-800-478-9300. Increased sampling may be required to monitor possible contamination from improper containment measures or a fuel spill.

### Maximum Contaminant Levels (MCL) of Volatile Organic Contaminants for Drinking Water

1,1-Dichloroethylene	7ppb
1,1,1,-Trichloroethane	200ppb
1,1,2-Trichloroethane	5ppb
1,2-Dichloroethane	5ppb
1,2-Dichloropropane	5ppb
1,2,4-Trichlorobenzene	70ppb
Benzene	5ppb
Carbon tetrachloride	5ppb
cis-1,2-Dichloroethylene	70ppb
Dichloromethane	5ppb
Ethylbenzene	700ppb
Mono Chlorobenzene	100ppb
o-Dichlorobenzene	600ppb
p-Dichlorobenzene	75ppb
Styrene	100ppb
Tetrachloroethylene	5ppb
Toluene	1,000ppb
trans-1,2-Dicholoroethylene	100ppb
Trichloroethylene	5ppb
Vinyl Chloride	2ppb
Xylenes	10,000ppb

NOTE: ( $\mu\text{g/L}$  is 1 ppb) ~